and declination amount to ± 0″·06 and ± 0″·05 respectively; the actual probable errors somewhat exceeding these values, as they involve the scale inaccuracies and other possible sources of error.

The Planet Mars.—In the early morning Mars is now visible on our eastern horizon. This period of 1892 will be the most favourable for observation that we have had since the year 1877. The opposition takes place on August 4 next, when the planet is near perihelion, so that its proximity to us will not be quite so great as was the case in 1877. The longitude of the planet at the time of its perihelion passage will be 333° 49′, but our earth will not reach this until August 27. The apparent diameter on the 18th of this month will amount to 17″·66, while on August 5 it will be 24″·78; the phases for these two dates will be respectively 1″·34 and 0″·05. The positions for the 17th, 21st, and 25th of this month are as follows:—

June	R. A.	Decl.
17	21h. 16m.	−20° 4′
21	21h. 20m.	20° 7′
25	21h. 22m.	20° 13′

L'Astronomie for June contains a very interesting article by M. Camille Flammarion, in which some quite recent observations of this planet are inserted. There are also several illustrations of the physical features, including the new map by M. Lohse and the drawings made by M. Nieston during the year 1888.

GEOGRAPHICAL NOTES.

The French Ministry of Public Instruction has authorized M. Ch. Almand, of the Natural History Museum of Limoges, to study the Seychelles Islands in detail with special reference to their fauna.

The Geographical Society of Lima has just issued the last number of the first volume of its *Boletin*, a most creditable publication containing many articles bearing on the geography of Peru and the Andes. Amongst the more important papers in the current issue are a monograph on Lake Titicaca, a discussion of the climatology of Peru, by Dr. Luis Carranza, and the report of a recent Commission sent out by the Peruvian Government to inspect the new road across the Andes leading to the highest navigable point on the eastern rivers. The road starting from Chicla, the temporary terminus of the Oroya railway, crosses the watershed at Casapalca at 17,500 feet of elevation, passes Tarma, Palca, La Merced, and thence runs northward through a little-known region inhabited by native tribes to Puerto Tucker, at the junction of the Pichis with the navigable tributaries of the Ucayali. In referring to this road at a recent meeting of the Royal Geographical Society, the Peruvian Consul pointed out that it would be easy, if a railway were constructed following the line of this road, and connecting steamers run on the Amazon and Ucayali, to reach Lima from London in twenty days instead of a month as is now necessary. Other papers in the *Boletin* deal with the archæology of the Andes region; all branches of geography being well represented.

A new Russian Expedition to Eastern Tibet and Sze-chuan in China has been decided on, and will set out next year, under the leadership of M. Potanin. It is intended to spend three years in the exploration, a sum of 30,000 rubles (about £3000) being granted by the Russian Government towards the expenses. Capt. Roboroffski accompanies the expedition, on the staff of which various scientific specialists will also be placed.

At the May meeting of the Paris Société de Géographie the great gold medal was presented to M. Élisée Reclus for his "Nouvelle Géographie Universelle," a work which, though unfinished, is of unique value, and is respected and consulted in all countries. This award is significant of the feeling that careful and conscientious collation and generalization of the work of explorers and travellers occupies a much higher place in the science of geography than has been hitherto accorded it. Amongst those to whom other gold medals were awarded are the Prince of Monaco, for oceanographical research; M. A. Paine, for explorations in Indo-China; M. J. de Morgan, for travels in Persia and Kurdistan; M. H. Coudreau, for ten years of exploration in the interior of French Guiana; and M. Alfred Fourneau, for exploration in French Congo.

NAPLES ACADEMY OF SCIENCES.[1]

This volume has been much delayed on account of a memoir by Prof. Trinchese on *Rhodope veranii*. That paper should have constituted the first of the present volume, but a notice leaf after the title-page informs us that it will be sent later on as a separate pamphlet. In consequence the volume starts with an elaborate paper in French, of 72 pages and three plates, by M. S. Kantor, "Sur la solution canonique du problème des transformations birationnelles périodiques," iv.ᵉ partie. This memoir treats of "Méthodes et problèmes; les caractéristiques internes et les caractéristiques permutables; les caractéristiques à 6, 7, 8 points; théorie arithmétique des caractéristiques de transformations birationnelles; les complex anallagmatiques de singularités et de la réductibilité des caractéristiques par équivalence birationnelles; les groupes impropres; les matrices birationnelles de M. de Jonquière; et sur plusieurs groupes de caractéristiques et de transformations."

Prof. F. Bassani contributes a paper on the Miocene Ichthyolites of Sardinia, from specimens collected and placed in his hands by Prof. Lovisato. The tables, cross-references, and index are admirable, and of great use to specialists in this branch. Many of our English workers, and above all, Societies, should take a lesson from this. It is occasionally the author of a paper, but far more frequently the responsible authorities of some scientific body, that are the cause of such valuable details not appearing in a paper. How often does it occur that for a paltry economy, a valuable memoir is cast upon the world a dismembered trunk, little comprehensible to the reader, and often a curse to the writer, who is exposed to all sorts of absurd criticisms because his original statements have been pruned to deformed stumps and his tables entirely suppressed.

Several old species are more fully illustrated by descriptions and neat plates drawn by Mrs. Bassani, as well as a new species of Thyrsites, Thynnus, Lamna, Myliobatis, &c.

Prof. Eugenio Scacchi has a memoir on the crystallography of certain new salts obtained by Prof. F. Mauro. The fluoximolybdate of copper is found to be monoclinic. Hypofluoximolybdate of copper is also monoclinic, whilst the hypofluoximolybdate of zinc is rhombohedral. Observations were difficult on account of the great deliquescence of these salts. The memoir is accompanied by one plate of crystal drawings.

Dr. Otto Schmiedeknecht, on his return from an entomological excursion to the Ionian Islands, placed in the hands of Prof. A. Costa all the Tenthredinidæ and Cephina that he had collected there. Prof. Costa describes these under 68 species, 9 of which are new. This is followed by a new genus of Italian Tenthredinidæ, named Laurentia, represented by the species *Laurentia Craverii*. The third section of this "Miscellanea Entomologica" is constituted by the description of four species of Armenian Hymenoptera: *Hylotoma cyanura*, *Allantus violaceipennis*, *Lissonota ducalis*, and *Lissonota decorata*. The "Miscellanea Entomologica" terminates with a new African Blattid, the *Derocalymma Brunneriana*, and is illustrated by one plate of figures in black.

Prof. G. Nicolucci, in a "Glimpse at the Ethnology of Egypt," discusses the different theories concerning the origin of the ancient Egyptians. By comparing the results obtained from historical records, monuments, anatomical observations, and descriptions of the people by ancient writers, he concludes (1) that the Egyptians belong to a white family related in prehistoric times to a Semitic branch; (2) that their physical characters form a type apart, which is clearly revealed in the monuments and the skulls obtained from the tombs of all periods; (3) that this type is the purer the more remote is the period of the monuments; (4) that it is true the immigration of other people into Egypt modified in part the primitive type of the population, but that the principal part of the Egyptians have always retained their primitive characters; (5) at the present, although the type has been crossed by intermarriage with different people in the cities, and other points frequented by strangers, it retains its original character in the Fellah, who are the true and legitimate modern descendants of the constructors of the Pyramids.

Prof. Nicolucci considers the Copts to be descended from ancient Egyptians, but with some infiltration of negro blood. The paper is accompanied by two plates, one of several modern Egyptian types, and one of the portrait of Rameses II. side by side with that of a Fellah.

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[1] *Atti della Reale Accademia delle Scienze Fisiche e Matematiche di Napoli*, Serie Seconda, vol. iv., Napoli, 1891.

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Signor G. F. Mazzarelli contributes some researches on the morphology and physiology of the glands of Bohadsch in the Aplysiidæ (the opaline gland of Vayssière). He also gives the diagnosis of a new species of Aplysia. The author gives an elaborate histological description of the organ illustrated by two coloured plates, and amongst other conclusions shows that three liquids are secreted—a white odoriferous, a violet, and a mucous—which he declares to have an important biological value, and to concur with the secretions of the mantle for the defence of the animal.

Dr. N. Terracciano in a note on some plants of the flora of Terra de Lavoro describes several species so far not met with in that district, others not included in the Italian flora, and some new species and varieties. Figures are given of *Arabis surculosa*, *Amaranthus crispus*, and *Kœleria collina*.

Next follows a monograph of the fossil Pristis, with a description of a new species (*Pristis lyceenis*) from the Miocene limestone of Lecce, and of course figured.

Dr. L. Manfredi has an interesting paper on the contamination of the street surface of large cities, from a hygienic and sanitary engineer's point of view, with special reference to Naples. Sweepings of the streets were made at 9 a.m.—that is, after the regular cleansing had been performed, so that the materials collected represented what remains all the day to contaminate the air and whatever objects it comes in contact with. The materials, collected with all due precautions, were submitted to bacteriological and chemical analysis. One gramme of fresh sweepings contains from 910·000 to 668,000,000 vital or living bacteria, or double the amount found in fresh fœces, or about 1319 times richer than drain water. Compared with the streets of Munich we find that the author there found 8000 to 12,840,000. He demonstrates that, so far as Naples goes, the more cleanly kept are the streets the lower is the number of bacteria in their sweepings, whilst they or their spores have great resisting powers to heat, sunlight, and desiccation. They are most abundant in the temperate seasons of spring and autumn; small rains increase them, torrents markedly diminish them. The Schizomycetes are the predominant type, but ferments and moulds are common. The chemical examination is equally interesting, and, as the author shows, the material is a most favourable culture medium for micro-organisms; which research leads up to a series of experiments to show how the number of these increase up to a certain date and then diminish in a given sample of sweepings; the effects of rain in facilitating this growth are demonstrated, and also the gases given off as the result of such changes.

The inoculation experiments are also not without interest. An examination of the sub-soil on the same lines is of great importance, and several practical and important conclusions are drawn from these researches, which the limits of space forbid our more fully reviewing. The memoir is one that should be consulted by every municipal officer.

Signor G. F. Mazzarelli has another long paper on the morphology and physiology of his favourite Aplysiæ of the Gulf of Naples, and illustrated by four plates.

Altogether this volume does credit to the Academy, but one regrets not to see papers by some more of its members.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

Oxford.—In a Convocation held on June 7, the thanks of the University were ordered to be conveyed to Mr. C. D. E. Fortnum, Hon. D.C.L., for his munificent gift to the Ashmolean Museum, and an indenture was sealed, the provisions of which place the Ashmolean Museum on an entirely new footing.

In the year 1888 Dr. Fortnum gave to the University a large portion of his collection of antiquities and works of art, which had been exhibited on loan in the upper room of the Ashmolean Museum. Dr. Fortnum has now notified his intention of bequeathing to the University the remainder of his collection together with his library, and he has undertaken to transfer to the University a sum of £10,000 on certain conditions, the main object of which is to provide for the care and maintenance of the Museum in the future. Under the indenture, which was signed on Tuesday last, the University is bound—

(1) To provide a sum, not exceeding £11,000, for the erection of a new Ashmolean Museum, on ground adjoining the University Galleries.

(2) To provide a sum, not exceeding £4000, for the fitting up and furnishing the Museum.

(3) To augment to £600 a year, at least, the income arising from Dr. Fortnum's benefaction of £10,000.

Dr. Fortnum's kindly intentions to the new Ashmolean Museum include a further bequest to the University of £5000 contingent upon the University voting the £15,000 for buildings, fitting, and furniture. With regard to this amount the University authorities make the following remark:—"Of the £11,000 required for the building, it appears that the Curators of the University Chest will have funds in hand in the course of this year and next, out of which this expenditure may be defrayed. It is right, however, to state that this will leave the University Chest for the present without further resources, in the form either of stock or of cash, for meeting any other new expenditure upon a large scale."

It is proposed that the old Ashmolean Museum, when no longer required for its present purpose, shall be available as an extension for the Bodleian Library, for which additional accommodation must have soon been provided.

The University Observatory.—The annual meeting of the Board of Visitors took place on Wednesday, June 8, when the Savilian Professor (Rev. C. Pritchard, D.D., F.R.S.) read his annual report. After remarking on the present condition of the buildings and instruments, the Professor said:—

"As anticipated in the last report, the work connected with stellar parallax is now complete, and I have placed upon the table a manuscript containing the result of that research. I need hardly say that it has been a work of unremitting labour, and one which has occupied the strenuous efforts of myself and the Observatory staff during the last four years. The manuscript thus completed consists of (1) the concise but complete history of all effective researches in stellar parallax up to the present date; (2) the results of the parallax work completed in this Observatory, extending on the whole to some thirty stars; (3) a catalogue of all parallactic determinations effected by other astronomers.

"The provision of photometric catalogues of stars of the ninth and eleventh magnitudes, within small specified areas for the use of the eighteen Observatories engaged on the international chart of the heavens, has been effected, and the results distributed through the agency of the Paris Observatory. The cause of this proceeding originated in the unsuccessful attempts to secure the required uniformity of stellar magnitude on the photographic plates by the employment of metallic gauze screens of one definite mesh. Much time was consumed on the experimental research into the action of such screens on the photographic image, and in the course of the inquiry certain unexpected and interesting results came to light, the substance of which I communicated to the Paris Academy, and which were subsequently published in the Transactions of that body. It is satisfactory to find that these photometric determinations have been appreciated and found to be of practical service, and have been acknowledged as such by both the Directors of the Greenwich and Paris Observatories.

"Notwithstanding these very serious interruptions, considerable progress has been made in securing the photographic plates for the international chart and catalogue. In number these plates amount to about 150, and it is hoped in future they will accumulate more rapidly, since the work on the preparation of these aforementioned photometric catalogues is now complete."

The report concludes with the usual acknowledgments to the assistants, and with this very satisfactory expression, on which we beg to congratulate the Savilian Professor—"The state of my health and other circumstances prevented my being present at the last meeting of the Board, but I am glad to say that the anticipation of the speedy and complete recovery, mentioned in the last report, has been fully realized."

Radcliffe Travelling Fellowship.—The Examiners for this Fellowship give notice that a Fellowship is thrown open this year to all persons who have been placed in the First Class in the School of Natural Science, without further restriction. The examination will be as far as possible in the subjects specified by the candidates who offer themselves for examination, and will take place in the first week in November.

SOCIETIES AND ACADEMIES.

London.

Royal Society, May 19.—"On the Measurement of the Magnetic Properties of Iron." By Thomas Gray, B.Sc., F.R.S.E. Communicated by Lord Kelvin, P.R.S.

This paper gives the method of experiment and results

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